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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,565	02/19/2004	Chil Min Kim	P24933	1703
7055 7590 02/01/2007 GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			EXAMINER MEDE, ESTEVE	
			ART UNIT	PAPER NUMBER
			2109	
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		02/01/2007	ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary

Application No.

10/780,565

Applicant(s)

KIM ET AL.

Examiner

Esteve Mede

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Specification

1. The abstract of the disclosure is objected to because in lines 6, 9, 11-12, 15 and 18 the form and legal phraseology "means" often use in patent claims should be avoided. In addition the abstract of the disclosure is objected to because the abstract exceed the length of 150 words.
2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Correction is required. See MPEP § 608.01(b).

Claim Objections

3. **Claims 6-8** are objected to because of the following informalities: in claim 6, line 5, claim 7, line 3 the terms “a variable”, “a coefficient”, “or an external force should be --the variable--, --the coefficient--, -- or the external force; claim 8, line 22 the term “an receiving means” should be --a receiving means--; Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. **Claims 3, 5-7** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3, 5-7, the scope of the terms “the feedback means is operated so that, when the modulated time-delayed signal is fed back, the modulated time-delayed signal is fed back to a variable a coefficient or an external force” cannot be ascertained because the specification fails to disclose the meaning of the terms “coefficient” and “external force” as applied to the invention.

As **claim 3**, lines 4-5 the term “the modulating means is operated so that a delay time of the chaotic signal modulated to a periodic signal, a semi-periodic signal, a chaotic signal or a random noise signal” cannot be ascertained because the specification fails to disclose how the “a periodic signal, a semi-periodic signal, a periodic signal or a random noise signal will be produce at the same time.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-14** are rejected under 35 U.S.C 102(b) as being anticipated by Kim (US 6,049,614).

With respect to **claim 1**, Kim discloses a chaotic signal generating high dimensional signal (see abstract; column 2, lines 11-20); time-delay modulator (the time-delay is coupled to the system as demonstrated in figure 9 therefore it is accurate that the limitation of time-delay modulation is met by Kim); feedback means for receiving chaotic signals, performing addition and subtraction of received signals (column 5, lines 21-28).

Regarding **claim 2**, a subtracter for receiving original chaotic signals and obtaining the difference between the received signals (column 2, lines 17-20; column 5, lines 21-28); a scaler for scaling a the difference signal output from the subtracter base on synchronization (column 6, lines 54-67; column 7, lines 1-4); an adder for adding signal output, and feeding the chaotic signal back to the signal generator (see abstract, lines 11-13; column 3, lines 16-30).

Regarding **claim 3**, the modulated means is operated so that a delay time of the chaotic signal is modulated to a periodic signal, a semi-periodic signal, a

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chaotic signal or a random noise signal (a time delay by definition is used to describe a process whereby an output signal has the same form as an input signal causing it, but is delayed in time; that is, the amplification of constant to those of corresponding input frequency components but each output component lags behind the corresponding input component by a phase angle proportional to the frequency of the component. The purpose of time delay is to feed information at delayed time intervals therefore, the limitation of time delay of a chaotic signal is modulated to a periodic signal, a semi-periodic signal, a chaotic signal or a random noise signal are intrinsic property of a time delay mechanism).

Regarding **claim 4**, the modulation is performed so that the delay time is modulated to the chaotic signal using a variable of a chaotic system (column 2, lines 46-52

Regarding **claim 5**, the feedback means is operated so that, when the modulated time delay signal is fed back, the modulated time delayed signal is fed back to a variable, or an external force (column 2, line 58-67, column 3, lines 1-12).

Regarding **claim 6**, the feedback is performed in such a way that the difference between the original signal and the modulated signal is obtained by a subtracter and feedback to a variable (column 5, lines 18-28).

Regarding **claim 7**, the feedback is performed in such a way that the modulated signal is feedback to a variable and external force (column 3, lines 1-5).

Regarding **claim 8**, encryption apparatus including first chaotic signal generator, generating high dimensional chaotic signal (column 2, lines 2-3, lines

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46-48); time-delay modulator (the time-delay is coupled to the system as demonstrated in figure 9 therefore it is accurate that the limitation of time-delay modulation is met by Kim); feedback means for receiving chaotic signals, performing addition and subtraction of received signals (column 5, lines 21-28); encryption means for receiving high-dimensional chaotic signal output from the delay time modulating means and an externally-applied information signal information signal and adding the signals to realize encryption (see abstract; column 3, lines 17-26); transmitting means for transmitting signal output from the encryption means as a wireless or wired signal (column 2, lines 11, 37); a decryption apparatus include a receiving means of the encryption apparatus, second chaotic signal generating high-dimensional chaotic signal(column 2, lines 15, 47-48, 61-62); feedback means for receiving the encryption signal output from the receiving means and the chaotic signal output from the second signal generating means performing addition and subtraction to obtain the result of the signals and feeding back the result to the second chaotic signal (column 5, lines 20-38, 51-63; column 3, lines 24-35); decryption means for performing a subtraction operation on the modulated time delayed signal output from the delay time modulating means and the encryption signal from the receiving means to realize decryption (column 3, lines 19-21, 38-41).

Regarding **claim 9**, the feedback means of the encryption apparatus include; a subtracter for receiving the original chaotic signal output from the first chaotic signal generating means and the time delay modulator signal output from the

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delay time modulating means and obtain the difference between the two received signals (column 2, lines 10-20; column 5, lines 21-28; see figure 9).

Regarding **claim 10**, the encryption means of the encryption is an adder (see abstract; column 12, lines 20)

Regarding **claim 11**, a subtracter for receiving the original chaotic signal output from the second chaotic signal generator and encryption signal output from the receiving means and obtain the difference of the received signals (see abstract; column 3, lines 47-49); scaling means for scaling the difference of the signal output from the subtracter to correspond with synchronization (see abstract; column 3, lines 54-67; column 7, lines 1-4); an adder for adding a signal output from the second chaotic signal generating means (see abstract, column 3, lines 16-30).

Regarding **claim 12**, the decryption means of the decryption apparatus is a subtracter (column 12, lines 20).

Regarding **claim 13**, the first and second chaotic signal generating means are synchronized so as to decrypt the encryption signal (see abstract; column 3, lines 38-41).

Regarding **claim 14**, a modulated time delay feedback chaotic system, comprising the steps of: generating a chaotic signal by a chaotic system in which variables are functionally connected and a delay time is modulated (see abstract; column 2, lines 58-67, column 7, lines 1-4); encrypting an externally applied information signal by adding information signal to the chaotic signal, the delay time of which is modulated, thus generating an encryption signal (column 3, lines

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13-30); transmitting the encryption signal, receiving the encryption signal and feeding the encryption signal to the chaotic system, receiving the chaotic signal output from the chaotic system and modulating the chaotic time delay of the chaotic signal to the received encryption, and extracting the information signal, by decrypting the encrypted signal (column 3, lines 13-41).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Esteve Mede whose telephone number is 571-270-1594. The examiner can normally be reached on Monday thru Friday, 8:30-5:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules can be reached on 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Esteve Mede

em
January 5, 2007FRANTZ JULES
SUPERVISORY PATENT EXAMINER